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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/788,538	02/27/2004	Charles J. Jacobus	IMM069E	7089
34300 7590 06/14/2007 PATENT DEPARTMENT (51851) KILPATRICK STOCKTON LLP 1001 WEST FOURTH STREET WINSTON-SALEM, NC 27101			EXAMINER SAID, MANSOUR M	
			ART UNIT 2629	PAPER NUMBER
			MAIL DATE 06/14/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/788,538	<b>Applicant(s)</b> JACOBUS ET AL.	
	<b>Examiner</b> MANSOUR M. SAID	<b>Art Unit</b> 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 February 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 13-18 is/are allowed.
- 6) ☒ Claim(s) 1-12 and 19 is/are rejected.
- 7) ☒ Claim(s) 20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>3/5/04</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Amendment*

1. This Office Action is in response to the amendment filed on 2/14/07

### *Double Patenting*

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

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3. **Claims 1-20** are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-58 of U.S. Patent No. 6,801,008 B1. Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 21-26 of current Application are broader than claims 1-58 of U.S. Patent No. 6,801,008 B1.

4. The omission of an element and its function where not needed is obvious. *Ex parte Rainu*, 168 USPQ 375 (PTO Bd. Of App. 1969). The omission of an element and its function in a combination is an obvious expedient if the remaining elements perform the same functions as before. *In re Karlson*, 136 USPQ 184 (CCPA 1963).

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-7, 9-10, 12 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Ruoff, Jr. (4,278,920; hereinafter referred to as Ruoff) in view of McIntosh (5,103,404)**.

As to **claim 1**, Ruoff teaches a system (figures 1 & 2) comprising an actuator (figures 1-2, (16)) coupled to a manipulandum (manipulator, (figures 1 & 2, (10)) (column 3, lines 55-68 and column 4, lines 1-10), and a controller (figures 1-2, (14)) coupled to the actuator (figures 1-

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2, column 3, lines 55-68 and column 4, lines 1-10), the controller operable to determine a stored force feedback effect to a force output by the actuator on the manipulandum (figures 1-4, column 2, lines 32-68, column 1, lines 1-35, column 5, lines 7-22, column 5, lines 46-68 and column 8, lines 27-53).

Ruoff does not teach wherein stored force feedback effect type and a magnitude.

However, McIntosh teaches wherein stored force feedback effect type and a magnitude (column 2, line 50 through column 3, line 15, column 6, lines 16-30, column 7, line 50 through column 8, line 2, column 16, line 40-56, column 25, line 60 through column 26, line 5 and column 27, lines 25-41).

Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to incorporate McIntosh's system having stored force feedback effect type and a magnitude into Ruoff's device so as to effectively train a robotic operator to perform the same sequence of control actuation automatically (column 6, lines 16-30).

**As to claims 2-3,** Ruoff teaches wherein the force feedback effect comprises one of a detent effect, a wall effect, and a spring effect (column 2, lines 49-68, column 5, lines 31-40).

**As to claim 4,** Ruoff teaches wherein the force feedback effect includes at least one parameter, and wherein the at least one parameter is at least one of a stiffness parameter, a damping parameter, a force parameter, and a distance parameter (column 2, lines 49-68).

**As to claim 5,** Ruoff teaches wherein the force feedback value comprises a sum of force contributions from a plurality of stored force feedback effects (figure 4, column 6, lines 37-68, and column 7, lines 1-15).

**As to claim 6**, Ruoff teaches further comprising a position sensor (figure 2, (42)) coupled to the manipulandum and the controller (figure 2 and column 5, lines 25-40).

**As to claim 7**, Ruoff teaches wherein the force output by the actuator is based at least in part on a velocity of a movement of the manipulandum (figures 1-4, column 5, lines 25-68, and column 8, lines 8-23), the velocity calculated on information received from the position sensor (figures 1-4, column 5, lines 25-68, and column 8, lines 8-23).

**As to claim 9**, Ruoff teaches further comprising a deadman switch (figure 2, (60)) and (column 5, line 60 through column 6, line 3).

**As to claim 10**, Ruoff teaches further comprising a gear transmission disposed between the actuator and the manipulandum (figures 1 & 4, column 4, lines 11-26 and column 6, lines 37-54).

**As to claim 12**, Ruoff teaches further comprising a communication port connected to the controller (figures 1-4 and column 2, lines 49-68).

**As to claim 19**, Ruoff teaches a method comprising receiving an input signal comprising a position of a manipulandum (figures 1-4 and column 3, line 55 through column 4, line 10); determining a stored force feedback effect to contribute to a force output by an actuator on the manipulandum (figures 1-4, column 2, lines 32-68, column 1, lines 1-35, column 5, lines 7-22, column 5, lines 46-68 and column 8, lines 27-53).

Ruoff does not teach wherein stored force feedback effect type and a magnitude.

However, McIntosh teaches wherein stored force feedback effect type and a magnitude (column 2, line 50 through column 3, line 15, column 6, lines 16-30, column 7, line 50 through

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column 8, line 2, column 16, line 40-56, column 25, line 60 through column 26, line 5 and column 27, lines 25-41).

Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to incorporate McIntosh's system having stored force feedback effect type and a magnitude into Ruoff's device so as to effectively train a robotic operator to perform the same sequence of control actuation automatically (column 6, lines 16-30).

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 8 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ruoff in view of McIntosh as applied to claim 1 above, and further in view of **Szakaly (5,038,089)**.

**As to claims 8 and 11**, Ruoff and McIntosh teach all claimed limitation except a joystick and a non-volatile memory.

However, Szakaly fairly teaches a joystick (figure 1, (22)) and a memory (figures 1-3) (column 4, lines 3-27, column 5, lines 18-68, column 6, lines 34-53, and column 7, lines 51-68).

Therefore, it would have been obvious to one ordinary skill in the art at the time the invention was made to incorporate Szakaly's system having a joystick and memory into Ruoff's

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modified device so that the system wide clock rate is selected at a sufficiently high rate that the operator at the master site experiences the force reflecting operation in real time (abstract).

*Allowable Subject Matter*

**9. Claims 13-18 are allowed.**

The following is an examiner's statement of reasons for allowance: Claim 13-18 allowed since certain key features of the claimed invention are not taught or fairly suggested by prior art.

**In claim 13**, “reducing the output of the maximum peak force to an output of a nominal peak force from the actuator when the power utilized by the actuator exceeds an average power level over a predetermined period of time, the nominal peak force associated with a maximum power that the actuator can utilize in continuous steady-state operation”.

**10. Claim 20 is objected** to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

“receiving a second signal comprising a calculated force feedback effect; determining a combined force feedback effect to contribute to a force output by an actuator on the manipulandum, the combined force feedback effect comprising the stored force feedback effect and the calculated force feedback effect”.

***Response to Arguments***

11. Applicant's arguments with respect to claims 1-12 and 19-20 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mansour M. Said whose telephone number is 571-272-7679. The examiner can normally be reached on Monday through Thursday from 8:30-6:00 P.M. The examiner can also be reached on alternate Friday from 8:30 a.m. to 5:00 p.m. EST. If attempts to

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reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard A. Hjerpe whose telephone number is 571-272-7681.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

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or faxed to: 571-273-8300 (for Technology Center 2600 only)

Hand-delivered responses should be brought to the Customer Service Window at the Randolph Building, 401, Dulany Street, Alexandria, VA 22314.

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Mansour M. Said

6/9/07



**RICHARD HJERPE**  
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